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Deploying Oracle Beehive with BlackBerry® Enterprise Server for MDS Applications

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Introduction

In today's enterprise, employees expect their mobile devices to enable the same level of productivity as their computer. Every year the number of employees using mobile devices increases, putting a strain on IT departments which need to adopt new technology and develop new support infrastructures for such services. Oracle Beehive Mobile Services in combination with BlackBerry® Enterprise Server for MDS Applications allows employees to achieve a high level of productivity with their mobile devices while utilizing infrastructure that may already exist in the enterprise.

To ensure ease of use and user productivity an enterprise requires a successful mobile device strategy. Oracle Beehive's Mobile Services paired with the BlackBerry® Enterprise Server from Research In Motion® (RIM) can be a key part of such a strategy.

Oracle Beehive is an integrated collaboration server providing enterprise-class messaging with email, group calendaring, contacts, tasks, and team workspaces. Leveraging Oracle Fusion Middleware and the Oracle Database, Oracle Beehive provides advanced communication capabilities to end users – including integrated voicemail/fax and document management – while providing IT with the robust security and streamlined manageability of Oracle Beehive's modern collaboration architecture.

BlackBerry® Enterprise Server for MDS Applications is an optimized application development framework for the BlackBerry® Enterprise Solution. BlackBerry® Enterprise Server for MDS Applications allows organizations to deliver corporate data wirelessly, leveraging RIM's proven push delivery model and advanced security features.

Oracle Beehive Mobile Services in combination with BlackBerry® Enterprise Server for MDS Applications provide a rich, secure experience for BlackBerry users. Together, these solutions allow mobile users to stay connected to the data, applications and tools they need most to meet critical business requirements.

Solution Overview

The figure below provides an overview of the Beehive Blackberry Mobile client solution. A full description of the system components and the interactions between each is described in detail in the following sections.
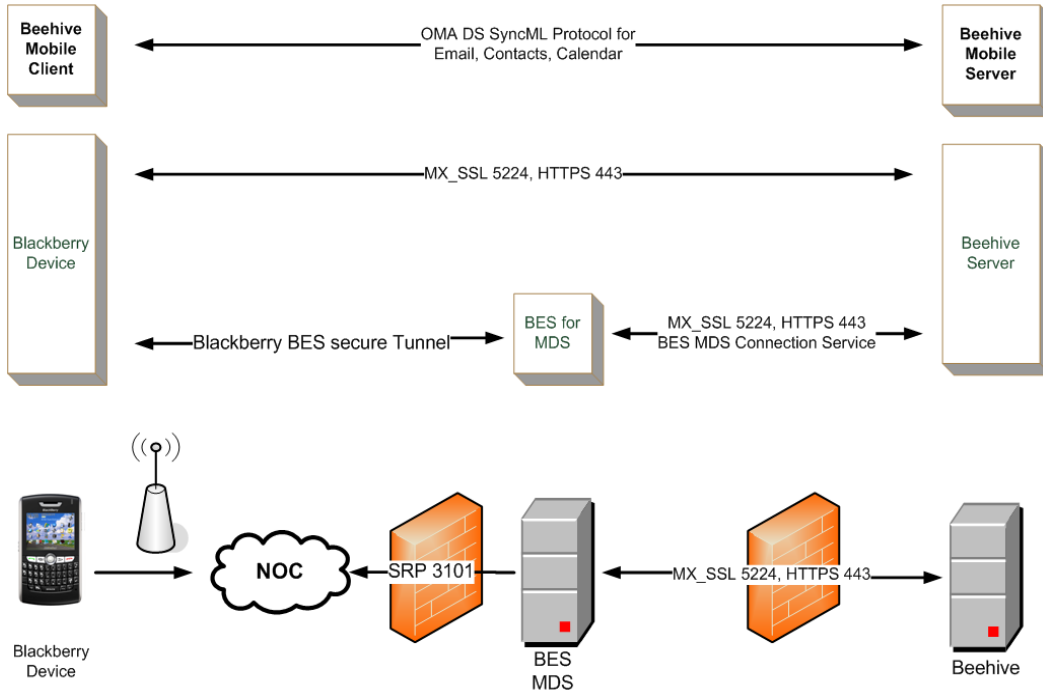

Figure 1. Beehive Mobile Client for Blackberry Solution Overview

The Beehive server stores email, calendar, contacts and other collaboration objects. Beehive Mobile server is physically part of the Beehive Server.

Beehive Mobile server synchronizes the collaboration objects to mobile devices by communicating with Beehive Mobile Clients or standard based third-party clients. The protocol is SyncML (OMA DS) over HTTPS (port 443) or MX_SSL (port 5224). The Beehive server already uses these ports to serve clients like Outlook and Beehive Web Mail (Zimbra).

For BlackBerry devices, our Beehive Mobile client communicates with the Beehive Mobile server via BlackBerry® Enterprise Server for MDS Applications. There is a secure tunnel between the Blackberry device and BlackBerry® Enterprise Server for MDS Applications. BlackBerry® Enterprise Server for MDS Applications provides a connection service that enables us to create a communication channel between the Beehive Mobile client on devices and the Beehive Server.

Beehive Mobile push service is used to do real-time alerts to trigger syncs when changes to email, calendar, tasks, and contacts occur.

BlackBerry Infrastructure

BlackBerry® Enterprise Server for MDS Applications is typically deployed behind the corporate firewall. Outbound port 3101 needs to be open as the server uses port 3101 to contact the NOC/SRP server, through which it can establish a secure end-to-end communication channel with Blackberry devices. Data flow is bi-directional but only BlackBerry® Enterprise Server for MDS Applications can initialize the connection.
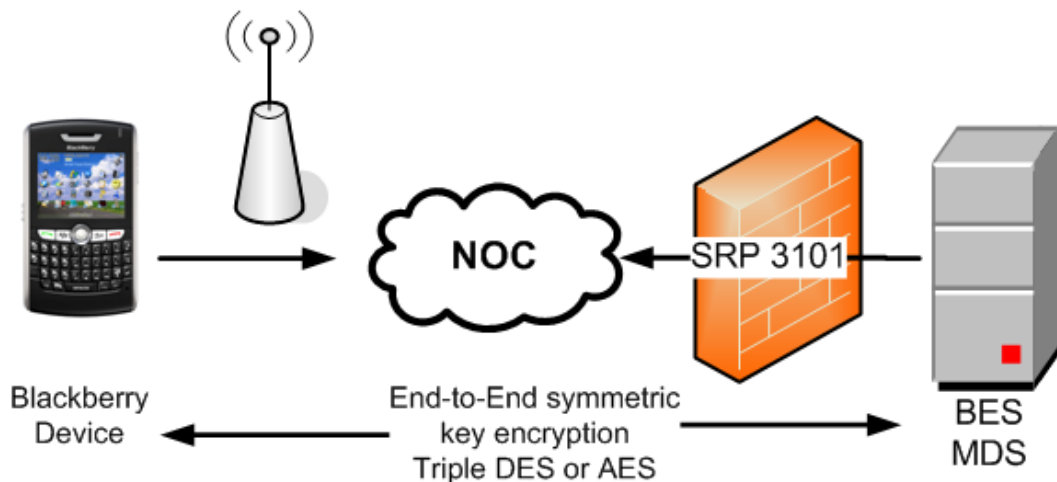

Figure 2. BlackBerry® Enterprise Server for MDS Applications Typical Deployment

BlackBerry® Enterprise Server for MDS Applications is designed to maintain a constant, direct outbound TCP/IP connection to the wireless network over the Internet through the firewall on port 3101

The system administrator must set your organization's firewall or proxy to permit the BlackBerry Enterprise Server to initiate and maintain an outbound connection to the BlackBerry Infrastructure on TCP port 3101.

BlackBerry® Enterprise Server for MDS Applications is designed so that data remains encrypted at all points between the BlackBerry device and the BlackBerry Enterprise Server. Only the BlackBerry Enterprise Server and the BlackBerry device can access the data that they send between them. Thus, third-parties, including service providers, cannot access potentially sensitive organization information in a decrypted format.

BlackBerry® Enterprise Server for MDS Applications uses either the Triple DES or the AES algorithm for standard BlackBerry encryption. By default, the BlackBerry Enterprise Server is set

to use the strongest common symmetric key encryption algorithm, of either Triple DES or AES, which both the BlackBerry Enterprise Server and the BlackBerry device support.

BlackBerry Enterprise Activation

The BlackBerry device and BlackBerry® Enterprise Server for MDS Applications use symmetric encryption to maintain a secure communication channel between each other. To do that, both ends need to know a shared secret, the encryption key. The way that Research in Motion implements this is to use email to transfer the secret key from device to server.
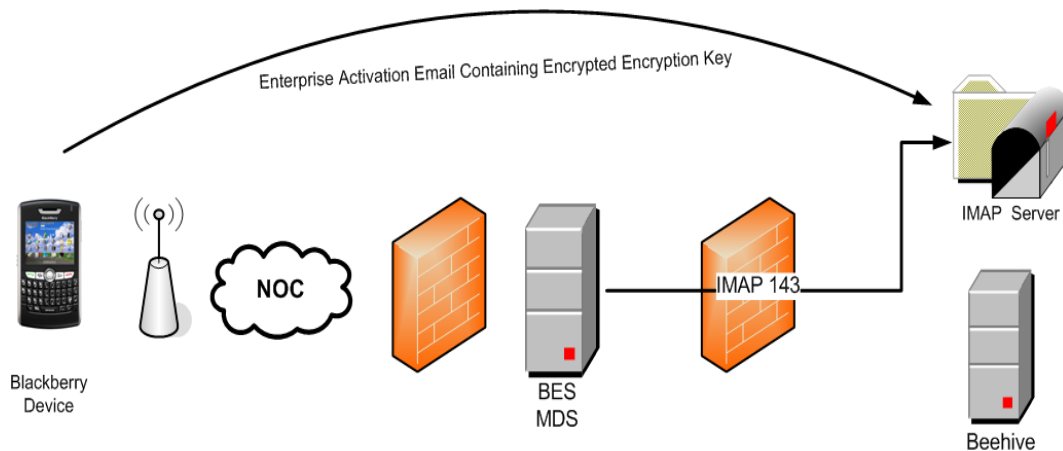

Figure 3. Activation Flow

To start, you need an IMAP account that BlackBerry® Enterprise Server for MDS Applications t can read. The admin creates an account for the user, using their PIN (each BlackBerry has a unique PIN). They then give this to the user (usually verbally in person or over the phone).

The user then goes into their device, to the Enterprise activation screen, enters an email address (the IMAP account mentioned above) and the password supplied by the admin.

The device then encrypts its local private key using the password entered, that then sends that payload to the email address supplied.

BlackBerry® Enterprise Server for MDS Applications monitors the IMAP account. When an email arrives it reads it and attempts to decrypt it with the password supplied. If it works, it then activates the account, and then starts pushing data to the device using the private key supplied by the device.

BlackBerry® Enterprise Server for MDS Applications therefore needs access to an inbox that stores the device enterprise activation messages. Note that the server only needs to access its own email account, not the end users' email account.

Within Beehive you need to create a unique IMAP account for each BlackBerry® Enterprise Server in your environment (e.g. *bes@yourorg.com*). Configure each IMAP account to send and receive information in plain text. IMAP port 143 needs to be open from BES to Beehive.

Note: Do not use a personal IMAP account for BlackBerry Enterprise Server activations. The BlackBerry Messaging Agent searches the mailbox for unread activation messages; if an activation message is marked as read before the BlackBerry Messaging Agent processes the message, enterprise activation does not complete successfully.

Beehive Mobile Software Deployment

Users must first activate their BlackBerry with BlackBerry® Enterprise Server for MDS Applications. Once activated, they can proceed to the Mobile Center in Oracle Beehive Central. Clicking on *New* allows them to register their BlackBerry with Beehive

Register New Device

A text message will be sent to your mobile device after you enter the device information and click Register. Click the link in this text message to complete the registration process.

Phone Number [ ]

Phone number must include the country code and should not have any spaces.
For example: 16501234567

Device Name [ ]

SMS Notification [ ] Enabled
[ ] Supports Smart Messages

Smart Messaging splits long messages into multiple parts that are then reassembled into a single message on receipt.

Figure 4.Reguister New Device Screen

A text message will be sent to their mobile device which contains a link back to the Beehive Mobile Device Management Service. Upon receipt users select the link provided to launch the BlackBerry browser. They are asked to login and a web page is displayed with a link to download the Oracle Beehive Mobile Client for BlackBerry. Users select the link to start the download.

After it has finished downloading it will begin installing automatically, users will need to provide their username and their password. The installer will then present the option to install both the Beehive Messaging client and the Beehive Communicator client. The user should choose to install both.

Upon successful installation the client will be synchronizing emails, meetings, tasks, and contacts.

Requirements

The solution described in this white paper requires the following:

- Oracle Beehive 2.0.1.2+

- BlackBerry® Enterprise Server for MDS Applications 4.1.7

- BlackBerry smartphones running BlackBerry OS 4.2.1 and above

References

BLACKBERRY ENTERPRISE SERVER FOR MDS APPLICATIONS – FEATURE AND TECHNICAL OVERVIEW

http://docs.blackberry.com/en/admin/deliverables/12935/BlackBerry_Enterprise_Server_for_MDS_Applications-Feature_and_Technical_Overview-T305802-967621-1130113534-001-4.1.7-US.pdf

BLACKBERRY ENTERPRISE SERVER FOR MDS APPLICATIONS – INSTALLATION GUIDE

http://docs.blackberry.com/en/admin/deliverables/12936/BlackBerry_Enterprise_Server_for_MDS_Applications-Installation_Guide--967686-1130113712-001-4.1.7-US.pdf

BLACKBERRY ENTERPRISE SERVER FOR MDS APPLICATIONS – ADMINISTRATION GUIDE

http://docs.blackberry.com/en/admin/deliverables/12933/BlackBerry_Enterprise_Server_for_MDS_Applications-Administration_Guide--966846-1130115121-001-4.1.7-US.pdf

Conclusion

To ensure ease of use and user productivity, an enterprise requires a successful mobile device strategy. Oracle Beehive's Mobile Services paired with BlackBerry® Enterprise Server for MDS can be a key part of such a strategy, allowing for secure and manageable mobile collaboration.

For more information about Oracle Beehive, please visit oracle.com/beehive or call +1.800.ORACLE1 to speak to an Oracle representative.

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Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:
Phone: +1.650.506.7000
Fax: +1.650.506.7200
oracle.com

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